147 Immigration, its consequences for fiscal developments in the receiving population

Immigration, particularly when it is from poorer to richer countries, often gives rise to concerns about economic impacts on the receiving country. One leading concern is that immigrants will impose a net fiscal burden on the non-immigrant tax payers by disproportionately drawing on public assistance, and, through their children, the educational system. At the same time, other people believe that immigration will alleviate population aging of industrial nations and bring them fiscal relief from the costs of providing health care and pensions to their growing populations of elderly. Most immigrants pay taxes as well as receiving benefits, so it is the net effect that matters. In modern industrial states, immigrants are seen as imposing net costs through public education, poverty programs, and some health programs, and potential net benefits through programs for providing health and pensions for the elderly, with ambiguous effects on net health costs in general. Do immigrants, on net, impose a burden on tax payers, or provide relief? The answer may influence policy decisions on the numbers and characteristics of immigrants to be admitted.

1. Sources of fiscal impacts

The history of these concerns extends at least into the 19th century in the US, and perhaps farther in other countries. However, the potential fiscal impact of immigration has grown larger in industrial nations over the course of the 20th century, as government spending has grown relative to the sizes of their economies, and as new welfare programs were initiated and grew to take a larger share of these expanding government budgets.

Some of the fiscal effects of immigrants would arise in a similar way from adding any new member to the population, for example a newborn native (see Externalities of Childbearing). Thus an immigrant increases the size of the population and increases the number of tax payers. The increase in the size of the population will increase the demand for social infrastructure and public capital of many kinds, such as roads, water supplies, sewer systems, police stations, fire departments, airports, and court systems. Either these must be expanded, requiring both capital outlays and increased current expenditures, or the quality of services delivered to the pre-existing population must decline. Given the nature of the tax system, these increased costs will be born by everybody, constituting a negative fiscal impact. We call these congestible services. For other services provided by the government, the quality of the service received per person is not degraded nor costs increased when the population grows. The goods generating such services are called public goods, and national defense (and related expenses such as services for veterans) are the leading example. A larger tax base reduces the cost to each individual tax payer of paying taxes to provide such public goods, so immigration has a positive fiscal impact through this route. An additional member of the population also dilutes common ownership rights in any collectively owned goods such as public lands and forests,
fisheries, or oil reserves, but also dilutes fixed financial responsibilities such as national debt and its servicing. The net effect can be positive or negative.

Other fiscal impacts arise because immigrants have different characteristics than natives. For example, immigrants have different demographic behavior: relatively high probability of returning to the source country, different fertility (in industrial countries, typically higher), and different mortality (controlling for ethnicity, typically lower). They have different cultural backgrounds (and may be less likely to put their elders in nursing homes, for example), and speak different languages (which may impede their absorption in the labor force or require special educational treatment). Immigrants tend to be in their young adult ages on arrival. Their educational attainment may be higher or lower on average than that of natives. Their incomes after arrival may be quite different than those of natives. These characteristics affect the taxes they pay, and the cost of the benefits that they and their children receive. The task is to assess these various impacts, and arrive at a quantitative evaluation.

Surveys or censuses often provide information on tax payments and benefits used by individuals or households, that can be identified as immigrants or immigrant-headed households. This information can be supplemented from the national income and product accounts and other sources to estimate public debt, defense expenditures, educational expenditures per pupil, and so on. From these building blocks, an estimate of fiscal impact can be constructed.

Although this may appear to be a straightforward accounting exercise, results depend heavily on just how the question is framed. For example, what is the net fiscal impact of: an immigrant in the current population? A currently arriving immigrant? A household headed by immigrants? An immigrant, over the life cycle? An immigrant, over the life cycle, together with all descendants? The biggest differences in approach are cross-sectional analysis versus longitudinal, and analysis of immigrants only versus immigrant households.

2. Cross-sectional analysis

Immigrants are tend to be in the younger working years at time of arrival, with relatively fewer children and elderly. People of working age typically pay far more in taxes than they receive in benefits. Consequently, if the focus is on more recent immigrants still in the working ages, or if the pace of immigration has been increasing so that most immigrants are recent arrivals, than the finding will generally be that immigrants are a net fiscal benefit, simply as a result of their particular age distribution. For example, in the US in 1994, the average immigrant in the population had a beneficial net fiscal impact of $1800 per year (Lee and Miller 1997:316-317). Many problems arise because this is a cross-sectional calculation based on a single year. Some of these immigrants arrived early in the 20th century and still survive, while others arrived within the most recent year. Such immigrants may have very different characteristics than those arriving today, yet all are
lumped together in the calculation. Furthermore, the immigrants will impose different costs or benefits as they age, and the representation of ages among the current immigrant stock may be misleading, particularly if immigration has fluctuated in the past. After arrival, immigrants will themselves age in the future, at which time taxes and benefits may be quite different. In addition, children pose special problems. Foreign born children are counted as immigrants, but they are relatively few. Often the children of immigrants born in the destination country are not themselves considered to be immigrants, in which case their costs and benefits do not enter into this calculation. However, the presence of these children is a consequence of their parents’ arrival as immigrants, and therefore is a part of their fiscal impact. Omitting these children (by counting only immigrants) imparts a positive (beneficial) bias to the estimated impact.

In an effort to take these children into account, some analysts focus on the net fiscal impact of households headed by immigrants (Espenshade and Garvey 1998 is an excellent example, and Akbari 1991, an interesting variation). These will include foreign born children as well as those who are born in the destination country. Changing the unit of observation from the individual immigrant to the immigrant household has a profound effect on the results. In the US case, the +$1800 impact per immigrant now becomes a −$400 per immigrant per year (Lee and Miller 1997:316-317). This estimate is still cross-sectional, and has all the associated problems of the previous. In addition, although now the children are counted, there are new problems, as follows: In many countries, including the US, the children born in the destination country are considered to be citizens, not immigrants. Such children enter the calculation only so long as they remain in their immigrant parents’ households, which is mainly during those ages when they are receiving costly public education. Once they become financially independent, and move out of their parents’ households, they no longer enter into the calculation. This approach therefore misses their working stage, in which they pay more in taxes than they pay in benefits. Consequently, the immigrant-household method is biased toward finding an adverse impact, because it counts these children only when they are young and costly, and not when they are older and net contributors. If we were to include the costs and benefits of all the second generation for the US, the average impact per immigrant would rise from −$400 when only children under 20 are counted, to +$900. Even within the cross-sectional approach, these variations in definitions lead to wide variation in the results. This is not satisfactory.

Until a few years ago, almost all analyses of the fiscal impact of immigration were based on one of these two methods, the individual immigrant or the immigrant household. Rothman and Espenshade (1992:411) review seventeen US studies; of these, nine take the individual immigrants approach, and the remaining eight take the immigrant household (or family) approach. Vernez and McCarthy (1996:7-8) update this survey with a look at nine studies since 1992, most of which use the immigrants-only approach. All these studies are biased in a positive or negative direction due to the method used.
3. Longitudinal analysis
Consider the purpose of this analysis which is intended to address the concern that additional immigrants admitted today will impose net costs on the pre-existing population. From this perspective, it is clearly new immigrants that matter, not immigrants that arrived decades ago and may have very different characteristics. It is clear that the fiscal impacts of admitting an incremental immigrant will not all be exerted immediately, but rather will unfold over the immigrant’s life time, conditional on survival and conditional on remaining in the country. It is also clear that children born to the immigrant and their taxes and benefits throughout their lives, and their children’s lives, are all part of the fiscal impact unfolding over time. In sum, the approach must be longitudinal. In principle, a household based approach could be used, provided that all individuals were tracked after leaving one household and entering a new household, for many decades or even centuries. However, in practice this is not feasible, and an individual approach is therefore preferable.

The first thorough going and detailed application of the longitudinal approach in this context was Lee and Miller (1997), followed by Auerbach and Oreopoulos (1999) and Storesletten (2000). The first two take a partial equilibrium approach, in which many potential feedbacks through the economy are ignored. Storesletten takes a general equilibrium approach, incorporating the effects of immigrants on wages and interest rates, in a dynamic perfect foresight setting; however, he includes less demographic detail and does not include public goods. Auerbach and Oreopoulos use a generational accounting framework; the approach of Lee and Miller will now be briefly described. Although the results from these three studies may appear to differ, once comparable assumptions are made they are all roughly consistent.

Lee and Miller (1997) estimate taxes paid and the cost of benefits received for immigrants by age, educational attainment, and time since arrival, as well as by age and educational attainment for the children of immigrants, and separately for all others in the population. These age profiles are then projected forward in time for a long time, based on assumptions about future rates of labor productivity growth, interest rates, trajectories of other government expenditures, and the assumption that taxes are adjusted so that the government debt to GDP ratio does not exceed 0.8. This requires tax increases when population aging accelerates in the next few decades. They also project the childbearing, survival and emigration of all immigrants and their descendants. Estimated impacts take into account effects through public goods, congestible goods, and collective wealth or debt, in addition to transfers through the welfare state. What initially appeared to be a straightforward accounting problem based on hard numbers has thus become a highly speculative and uncertain exercise in very long term projection.

Results can be summarized in various ways. For example, the net present value (NPV) of the long stream of taxes minus cost of benefits due to an incremental immigrant can be calculated, perhaps separately for each age and level of education at arrival by country of
origin, sex, or other attributes. For the US, the NPV averaged across the actual age-sex-education composition of the immigrant stream around 1994, and using a real interest rate of 3% was +$80,000. Annualized, this comes to $2400 per year. Multiplying by 1.4 million gross immigrants per year, and dividing by the US population of 260 million in 1994, this implies an impact per destination resident of only +$13 for all the immigrants arriving in a given year, which is small. It is useful to examine the results more closely by level of government, by characteristics of the immigrants, and by time horizon.

In the US, the federal government has the main responsibility for providing pensions to and health care to the elderly. The state and local governments have the main responsibility for providing public education and some other services for children. Consequently, immigrants are highly beneficial to the federal budget, with NPV of +$105,000 per immigrant in 1994, while they negative impacts for the state and local governments, with NPV of −$25,000, combining for the net value of −$80,000. In other countries, with a different division of responsibilities, the situation would, of course, be different. But in the US, certain states and local areas which receive large numbers of immigrants suffer a substantial negative fiscal impact. The federal gains from immigration are spread evenly across the residents of all states, whether those states receive immigrants or not. This leads to political tensions between local, state and federal governments. Some states have sued the federal government for compensation, particularly for the costs of undocumented immigrants.

Results also vary by characteristics of the immigrants. Governments wishing to achieve a positive fiscal impact (as suggested by Storesletten, 2000) could use estimates like these to inform their policy decisions. The NPV for immigrants and their descendants is highest for immigrants arriving between ages 15 and 25, peaking earlier for those with little education at arrival, and later for those with more. At any age, more highly educated immigrants have higher NPVs. For example, for arrivals at age 20, those with less than a high school education have an NPV of +$33,000; of exactly high school education, +$146,000; and for more than high school, +$288,000. Much of this is due to the contributions of descendants for arrivals before age 30 or so. Arrivals later in life who do generate descendants have low or negative NPVs, and elderly immigrants are particularly costly. For example, an immigrant arriving at age 70 has an NPV of between −$149,000 and −$225,000, depending on education.

Finally, results vary strongly by horizon. The NPVs abstract from this dependence on time. Immigrants are initially quite costly, while they assimilate into the job market and while their US born children are young. It takes about twenty years before the federal benefits per year begin to outweigh the costs at the state and local level. Thereafter, the net effect is positive.
Suppose there are an additional 100,000 immigrants per year in perpetuity, with the same distribution of characteristics as in the current flow. The fiscal consequences of this scenario can be projected for each year in the future, with no need to calculate present values. This avoids many of the uncertainties of the projections many generations into the future. For the US this incremental perpetual stream of immigrants would initially impose a cost per US resident of about ten dollars per year for the first 20 years, and thereafter there would be a growing net benefit, reaching about $80 per person per year by 2050.

The topic of fiscal impacts of immigration has generated heated political controversy in many countries. It is true that depending on governmental structures and the degree of decentralization, immigration may cause serious fiscal pressures in certain years in certain localities. However, the net effect for the average immigrant in a typical industrial country might well be positive, since most industrial countries currently have tax based public pension systems, and face severe budgetary stresses from population aging. However, the net effect would also depend on the level of national debt and on the proportion of the national budget spent on defense. Perhaps the most important message from the studies reported above, though, is that the net effects of immigrants are surprisingly small at the national level. They hardly appear sufficient to be an important consideration in forming immigration policy.
Bibliography

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